The BIM Challenge
A Gamified Framework for Learning

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More about us
Did you make it to the class?

Ready? Go!

Autodesk University is like riding a bike on a rope between two whales, while sailing the ocean in the middle of the storm. Always... interesting.

It’s Wednesday and it’s 7 pm. You just went back to your room after a full day of classes and the AUGI Annual Meeting. You have a whole load of notes, handouts, slides, pictures and business cards to sort out, but the Block Party is about to start.

Priorities, priorities, those priorities will kill you.

What do you do?

- Stay in your room for a while: [[34]]
- Go straight to the party: [[7]]
A Gamified Framework for Learning
What this class is not about
What this class is about
BIM is collaboration
BIM Adoption

The Innovators Curve
WHO ARE THE TRAINERS?
YOU ARE A TRAINER!
How Do You Normally Teach
The importance of being Osvaldo: an innovative school in Italy, courtesy of Angelo Bardini
The Ages of men
The Ages of men
Children

DIRECTION

EXPERIENCE

PROGRAMMES

AIMS

MOTIVATION
Children vs. Adults

**Direction**

**Experience**

**Programmes**

**Aims**

**Motivation**
Adults Forget

Memory Retention

Time

(1 hour)

(9 hour)
Ebbinghaus Memory Retention curve in relation to repetitions

% of data remembered

100 - 80 - 60 - 40 - 20 - 0

1st 2nd 3rd 4th 5th

Repetitions over Time

Ebbinghaus Memory Retention curve in relation to repetitions
The L-D-A learning cycle
The parametric nature of classic architecture: a good “lecture” phase for a lesson about Revit families
Demonstration of how to build a Ionic column, by K. BIM (3D Parametric Revit Families)
Activity

ADMINISTER ACTIVITY → MONITOR & EVALUATE PERFORMANCE → PROVIDE FEEDBACK
Lots of “Activity Phases” are an act of mimesis
Ebbinghaus Memory Retention curve in relation to repetitions.
Individual Competency Index (ICI) by the BIM Framework Blog

- **Conceptual Knowledge**
  - Basic level of conceptual knowledge
  - Intermediate level of conceptual knowledge
  - Advanced level of conceptual knowledge
  - Expert knowledge in a conceptual topic or set of topics

- **Applied Knowledge**
  - Basic level of applied knowledge + initial practical application
  - Intermediate level of applied knowledge + practical application
  - Advanced level of applied knowledge + practical application
  - Expert level of applied knowledge + practical application + repetition

**0**: None
**1**: Basic
**2**: Intermediate
**3**: Advanced
**4**: Expert
Swimming Classes at the New Jersey City University: I bet they teach you how to swim.
The essence of training is to allow error without consequences.
Orson Scott Card, *Ender’s Game*.
Ivan Constantinovich Aivazovsky, “Ships in a Storm”
Field invasion in the Olympics
Building Proficiency in BIM
BIM Competency is proficiency in using the instruments and in mastering the process.
What are instruments?
BIM software characteristics
What are processes
L-D-A for Instruments
L-D-A for Instruments
Activity
L-D-A for Processes

Diagram:
- L (Lecture)
- D (Activity)
- A (Demo)

Process flow:
1. Lecture
2. Activity
3. Demo
4. Return to Lecture
Lecture
Autodesk Navisworks Manage Trapeio Logistics Plan.nwd

Naviswork from Autodesk University
LEGO set nr. 21103: a three-in-one DeLorean car (and you can choose which one to buy)
5 Freedoms of a Game

FAIL
EXPERIMENT
FASHION IDENTITIES
EFFORT
INTERPRETATION
La Sfida del BIM (The BIM Challenge), 2017, published by Tecniche Nuove
Il tuo Coordinator è chiuso messa giornata nel suo ufficio. Ogni tanto socchiude la porta, guarda una presentazione, prende un portatile e si saluta.

1. Se hai un RIM Coordinator di posizione, vai al 312.
2. Se hai un RIM Coordinator d'assalto, vai al 560.

383

Il tuo RIM Manager è molto competente e straordinariamente efficiente, ma ha una stranezza personalissima: non conosce il progetto. Il massimo che può fare è pianificare la struttura del tuo turno di lavoro, poi esclude qualcosa che dovette lavorare sul progetto per assicurare gli elementi costanti dell'approccio.

1. Se hai un RIM Coordinator d'assalto, vai al 496.

384

Quale qualche giorno di ricerca, il tuo gruppo di lavoro viene preso dallo scontro. Tocca ancora aver perso il contatto con la realtà, e che le tue richieste fantasiosifiche stanno portando a un tempo che potrebbe essere dedicato alla progettazione. Il piccolo che fa un vero è un essere maledettamente.

1. Non hai comunque. Vai al 332.

385

Il cliente apprezza il lavoro ricevuto, condannato a non avere una reputazione in Piazza delle più significative. Devi assicurarti il particolare e indicarlo ai tuoi superiori. E questo richiederà un po' di tempo, ma riceverà anche il rimborso spese per attività.

Continua andando al 470.

386

Il tuo Coordinator sostiene vigorosamente che un sistema è benissimo. Definisci la tua scelta "un overkill", un'esagerazione per giunzi.

Ti convince a utilizzare un sistema simile a quello che ha detto.

Continua andando al 301.
Gabriele Gallo at Halloween in 2017
Building a Game
Overview of a Game
Different kinds of audiences.

This is a good spot to say that all icons are from Venngage and Flaticon: check them out.
The Objective
Players need a goal.
Like bringing home one prestigious, fictional project of national relevance
Checkpoints
RIBA stages of Work: you divide the work into stages, don’t you?
Exams are checkpoints.
Revit SWAT: how to Scale a Revit family
How to reach an objective?
Importance of Choice
4 Types of non-linear storytelling

- Emergent
- Labyrinth (Standard)
- Labyrinth (Linear)
- String of Pearls
Jeffrey Smart, “The Labyrinth” (2013)
Maestro dei Cassoni Campana, “Teseo e il Minotauro” (1510-15)
String of Pearls

+  

+  

+  


Good and Bad Choices
Reinforcement vs. Punishment
<table>
<thead>
<tr>
<th>The Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td>Reinforcement</td>
</tr>
</tbody>
</table>
Positive Reinforcement
# The Matrix

<table>
<thead>
<tr>
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<th>Positive</th>
<th>Negative</th>
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</thead>
<tbody>
<tr>
<td><strong>Reinforcement</strong></td>
<td><img src="image1" alt="Positive Reinforcement" /></td>
<td><img src="image2" alt="Negative Reinforcement" /></td>
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Negative Reinforcement
# The Matrix

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<th>Negative</th>
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<td><img src="image" alt="Positive Reinforcement" /></td>
<td><img src="image" alt="Negative Reinforcement" /></td>
</tr>
<tr>
<td><strong>Punishment</strong></td>
<td><img src="image" alt="Positive Punishment" /></td>
<td><img src="image" alt="Negative Punishment" /></td>
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Positive Punishment
# The Matrix

<table>
<thead>
<tr>
<th>Reinforcement</th>
<th>Positive</th>
<th>Negative</th>
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<tr>
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<td><img src="image2.png" alt="Positive Reinforcement Icon" /></td>
<td><img src="image3.png" alt="Negative Reinforcement Icon" /></td>
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<table>
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<th>Negative</th>
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<td><img src="image5.png" alt="Positive Punishment Icon" /></td>
<td><img src="image6.png" alt="Negative Punishment Icon" /></td>
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Negative Punishment
Heaven and Hell
Measure the Effect of Choices
<table>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
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<td>Steven</td>
<td>Mary</td>
<td>Ann</td>
<td>Raymond</td>
<td>Mark</td>
<td>Paul</td>
<td>Eliza</td>
<td>Kelly</td>
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<td>51</td>
<td>92</td>
<td>56</td>
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<tr>
<td>10</td>
<td>Overall Average</td>
<td>54.13</td>
<td>85.00</td>
<td>53.63</td>
<td>56.25</td>
<td>44.25</td>
<td>72.50</td>
<td>78.13</td>
<td>58.50</td>
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We need resources.
Complex Facade Modelling
Managing a Collaborative Environment
How to keep the player in?
Valuable Objective

Adequate the treasure
Fueled by Challenge
A game of golf
Playing the AEC Game
Your Goal
Your Checkpoints
Your Resources
Uncle Sam wants you to decide
Do it Yourself
Respect the Structure
Use different Media
(but keep it consistent)
From left to right: Lynda.com and Twinery.org, an open-source tool for non-linear storytelling
1. READ THIS PARAGRAPH. IT’S ME, YOUR TRAINER!
Now go to paragraph 2.

2. GOOD, YOU MADE IT!
You can have a cookie and go to paragraph 4.

3. HEY, YOU’RE CHEATING!
This is paragraph 3: give me back that cookie and proceed to 4 for real, this time.

4. SUCCESS! This is where I wanted you to be.
How many cookies do you have?

  1. Good boy!
  0. Well, that should teach you not to cheat!
A set of dice
As a Teacher, you need to define your goals
Objective
Checkpoints
Types of Choices
Conclusion
The Game as an Instrument
an ancient telescope
The game broadens our ability to train people.
What’s Next?
Team BIMding®
Il metodo più innovativo di creare Team pronti alle sfide del BIM.
RATE THE CLASS